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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,201	02/28/2002	Evert E. deBoer	13917	4918

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EXAMINER	
BLOUNT, STEVEN	
ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/084,201	DEBOER ET AL.	
	Examiner	Art Unit	
	Steven Blount	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 – 3 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,744,727 to Liu et al.

With regard to claim 1, Liu et al teaches determining the backup paths in a network, followed by determining the spare capacity on each of these links when a node fails. See col 4 lines 60+, col 5 lines 1+, and col 8 lines 33+.

While Liu et al does not explicitly teach combining *only a first and second path*, Liu et al does teach globally optimizing the spare capacity in link backup paths in a network; wherein it is stated in col 11 lines 40+ of Liu et al:

"A problem facing network designers utilizing path restoration is determining the amount of spare capacity and placement of link-disjoint backup paths necessary to implement the path restoration plan. Network designers use the information in FMTs as a way to determine path-link integer programming model for the spare capacity allocation problem of the network." Liu then goes on to provide a means for accomplishing this, as described in col 12 lines 20+, where there is discussed "minimization of the total cost of the reserved spare capacity of the network."

(See also col 8 lines 11+ and note that in forming the backup matrix, any path inefficiencies would be eliminated).

Thus, combining the spare capacity of the backup channels to form an optimum network solution as taught in Liu et al would have rendered obvious to one of ordinary skill in the art at the time of the invention releasing and replacing protection channels on an individual basis, *wherein the assessment of whether the channels may be combined is based on whether a lowest cost function for the optimized network is obtained for the network.*

With regard to claim 2, the common resources exist between the working paths being optimized.

With regard to claim 3, sharing of the protection path among other resources would be obvious in view of the teachings of Liu et al, as discussed above, particularly in col 11 lines 40+.

With regard to claim 15, see the above and further note the processor discussed in col 9 lines 20+.

3. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,744,727 to Liu et al as applied above, and further in view of U.S. patent 7,093,160 to Lau et al.

Liu et al teach the invention as described above but do not teach the use of MPLS. Protection path rerouting in an MPLS system is taught in Lau et al. See col 4 lines 45+. It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided a system for optimizing path bandwidth redundancy through

the merging of redundant paths in an MPLS system in Liu et al in light of the teachings of Lau et al in order to provide a system wherein bandwidth usage is optimized.

4. Claims 4 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent 6,744,727 to Liu et al as applied above, and further in view of U.S. patent 6,850,997 to Rooney et al.

With regard to claim 4, Liu et al teaches the invention as described above but does not teach determining if there is a common point of failure before assigning the protection channel.

Rooney et al teaches setting a path through a network so that a common point of failure is avoided. See col 4 lines 43+.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided Liu et al with a means for avoiding common points of failure, in light of the teachings of Rooney, in order that a more robust system of network protection.

With regard to claims 5 – 6, see the discussion of claims 2 – 3 above.

With regard to claim 7, querying the second source is an obvious variation of querying the first source.

With regard to claims 8 – 9, note the use of an optimized resources in col 8 lines 13+ (shortest path).

With regard to claims 10 – 11, determination of sharing working/protection paths would be made obvious in view of the teachings of Rooney et al as discussed above.

With regard to claim 12, determining if a number of protection paths share the channel would be obvious in order to optimize the use of system resources.

With regard to claim 13, see the rejection of claim 4 above.

With regard to claim 14, see the above and note that it would be obvious to store the process steps on a computer medium in order to insure their repeatability.

5. Applicant argues that Liu teaches a network centric approach (with increased complexity) that does not rely on combining protection channels. Applicant also appears to suggest that actual, physical nodes must be present (page 3, par 2). Applicant also believes that Liu is more suitable to the design of a network.

The examiner respectfully disagrees.

It is noted that a network-centric approach would still combine protection paths as applicants invention does, the added benefit being that an optimum routing solution is obtained to the problem.

There is no need for the use of actual physical nodes. First and second nodes with their component protection paths are taught in Liu.

There is no appreciable difference between network design, and applicants invention, as combining the paths is done based on a beforehand calculation wherein capacity is reduced, as in Liu et al.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Blount whose telephone number is 571 - 272 - 3071. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Seema Rao, can be reached on 571 – 272 – 3174 . The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB

3/22/07

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